EXECUTIVE SUMMARY

This report contains the Energy Commission staff's independent analysis and recommendation on the Blythe Energy Project Phase II (BEP II) proposed by Caithness Blythe II, LLC. **This is <u>not</u> the decision document for these proceedings nor does it contain findings of the Energy Commission related to environmental impacts or the project's compliance with local/state/federal legal requirements.** The final decision including findings, will be made by the Commissioners of the California Energy Commission after completion of evidentiary hearings. During evidentiary hearings the Commissioners will consider the recommendations of all interested parties, including those of the Energy Commission staff presented in this document; the applicant; intervenors; concerned citizens; City of Blythe; and other local, state, and federal agencies, before making a final decision on Caithness' Application For Certification (AFC) to construct and operate a nominally rated 520 megawatt (MW) combined-cycle power plant.

It is the responsibility of the Energy Commission staff to complete an independent assessment of the project's potential effects on the environment, the public's health and safety, and whether the project conforms with all applicable laws, ordinances, regulations and standards (LORS). The staff also recommends measures to mitigate potential significant adverse environmental effects and conditions for construction, operation and eventual closure of the project, if approved by the Energy Commission. The analyses contained in this document were prepared in accordance with Public Resources Code Sections 25500 et seq.; the California Code of Regulations, Title 20, Sections 1201 et seq.; and the California Environmental Quality Act (Pub. Resources Code § 21000 et seq.) and its guidelines (Cal. Code Regs., tit. 14 § 15000 et seq.).

The BEP II and related facilities are under the Energy Commission's jurisdiction (Pub. Resources Code § 25500). When issuing a license, the Energy Commission is the lead state agency (Pub. Resource Code § 25519(c)) under the California Environmental Quality Act (Pub. Resource Code §§ 21000 et seq.), and its process is functionally equivalent to the preparation of an environmental impact report (Cal. Code Regs., tit. 14 § 15251(k)).

The BEP II AFC was filed by the applicant Caithness BEP II on February 19, 2002. The project AFC was amended in May 2002 to relocate the BEP II structures to the adjacent parcel and again in July of 2002 to reconfigure the evaporation ponds. On April 15, 2004, the applicant filed a Revision to Section 2.0 (Project Description) of the AFC describing how the project would interconnect to the electrical grid.

The BEP II AFC review process has taken considerably longer than the Commission's standard one year schedule due to changes in the project, incomplete information from the applicant and several major unresolved issues. Staff issued three rounds of data requests to the applicant and conducted several Data Request/Data Response/Issue Resolution Workshops in Blythe, Ontario, and Sacramento. Staff also held numerous conference calls and meetings with the applicant and transmission owning utilities to resolve outstanding issues.

PROJECT LOCATION AND DESCRIPTION

The BEP II site is located within the City of Blythe, approximately five miles west of the center of the City. The 76- acre site is located adjacent to the west side of the Blythe Energy Project Phase I (BEP I), which is owned and operated by Florida Power and Light. BEP II would be operated separately from BEP I, with some shared facilities as described below. The project site is east of the Blythe Airport, which is owned by Riverside County and operated by the City of Blythe. The project site is on an intermediate plateau, about 70 feet in elevation above and west of the Colorado River Valley and the City of Blythe and about 60 feet below the elevation and east of the Blythe Airport. The topography of the project site is flat. (Please refer to **Project Description** Figure 1)

BEP II is a nominally rated 520 megawatt (MW) combined-cycle power plant. The proposed project is adjacent to the approved and operating Blythe Energy Project Phase I (BEP I) that was permitted by the Energy Commission in March 2001. BEP II consists of two Siemens Westinghouse V84.3a 170 MW combustion turbine generators, one 180 MW steam turbine generator and supporting equipment. BEP II may utilize some existing facilities at the BEP I site including the BEP I Control/Administration and Maintenance Buildings. Other BEP I facilities that may be expanded to serve BEP II include the groundwater supply, fire protection facilities and site access roads. Natural gas would be supplied to BEP II plant by the natural gas pipeline constructed as part of BEP I.

As described in the AFC Project Description, BEP II would be interconnected to the regional electricity grid at the Buck Boulevard Substation, located in the northeastern corner of the BEP I site. The federal Western Area Power Administration (Western) constructed the Buck Boulevard Substation as part of BEP I. Additional facilities would be provided in the Buck Boulevard Substation by Western for connection to BEP II. The revised Project Description submitted on April 15, 2004 proposed that BEP II be connected to the future Desert Southwest Transmission Project (DSWTP) via a connection to Western's existing Blythe Substation adjacent to the Buck Boulevard Substation.

Water to operate the proposed BEP II facility would be supplied by two (2) deep on-site groundwater wells each having the capacity to pump up to 3,000 gallons per minute (gpm). Supply and wastewater treatment systems similar to those constructed as part of BEP I would be provided. An additional wastewater evaporation pond would be provided for BEP II.

The BEP II would use about 3,300 acre-feet of water annually for cooling and other purposes. BEP II has been ordered by the U.S. Bureau of Reclamation to develop a water conservation offset program (WCOP) to offset its groundwater use. As part of this water conservation effort, the WCOP would retire or fallow lands on a rotational basis within the Palo Verde Irrigation District's (PVID) service area that are, or have been, irrigated within the past five years. These lands also would be situated in the Palo Verde Mesa and/or the Palo Verde Valley. If the fallowing option is chosen, based on a consumptive water use volume of 4.2 acre-feet per acre per year and BEP II's proposed

usage of 3,300 acre-feet of water per year, the WCOP would idle about 786 acres of irrigated farmland every year for the life of the project.

PUBLIC AND AGENCY COORDINATION

Extensive coordination has occurred with the numerous local, state and federal agencies that have an interest in the project. Particularly, Energy Commission staff has worked with the City of Blythe, Riverside County Airport Land Use Commission (ALUC), California Department of Transportation (Caltrans) Aeronautics Division, Federal Aviation Administration, U.S. Department of the Interior, Bureau of Land Management, California Independent System Operator (Cal-ISO), Western, Southern California Edison (SCE), Palo Verde Irrigation District (PVID), Colorado River Board of California, Mojave Desert Air Quality Management District (MDAQMD), California Air Resources Board, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and California Department of Fish and Game to identify and resolve issues of concern.

The Preliminary Staff Assessment (PSA) was published on November 14, 2003. The PSA concluded that there was insufficient information for staff to determine if the project would conform with all applicable LORS, and whether the project's potential impacts on public health and safety, the environment, and the regional transmission system would be adequately mitigated. Substantial additional information for Air Quality, Biology, Cultural Resources, Land Use, Socioeconomics, Traffic and Transportation, Transmission System Engineering (TSE), Worker Safety and Fire Protection, and Soil and Water Resources was specifically identified as necessary to complete the analysis, prepare the FSA and make the necessary recommendations.

In its Scheduling Order of February 4, 2004, the Committee determined that there were several topics in the PSA for which the applicant needed to supply data for Energy Commission staff to have sufficient information to complete and file its FSA. The order determined that the information should be submitted by March 22, 2004. The specified information was not provided to the Energy Commission by the required date. Energy Commission staff requested and was granted a day-for-day extension in the schedule until all outstanding information was submitted and complete.

The applicant submitted the last remaining information from the Committee Order on January 20, 2005. Energy Commission staff conducted PSA Workshops in Blythe on January 26, 2005, and in Sacramento on February 15, 2005. Written PSA comments received from local, state, and federal agencies, and concerned citizens, along with staff's response to each, have been included in this FSA. Written and verbal comments were carefully considered and incorporated into the analysis where appropriate.

JOINT CEQA/NEPA PROCESS

Caithness Blythe II has filed a request with Western to interconnect the proposed BEP II power plant at the Buck Boulevard Substation. Western proposes modifications at its Buck Boulevard Substation to accommodate the interconnection of the proposed power plant. The request to interconnect to Western's power system triggers a Federal National Environmental Policy Act (NEPA) review process in addition to the Energy

Commission's CEQA permitting process. Western also is the lead federal agency for compliance with the National Historic Preservation and Endangered Species Acts.

SUMMARY OF STAFF'S TECHNICAL CONCLUSIONS

Energy Commission staff has serious concerns that BEP II, as currently located and designed, would have potentially significant adverse impacts to Biological Resources, Water Resources, Land Use, and Traffic and Transportation. Each of these impacts have some degree of linkage to each other. They are summarized below along with the relationship between them.

Staff expects that BEP II's proposed evaporation pond would have high, toxic levels of selenium and sodium in its water similar to the levels recently measured in BEP I's existing ponds, which would be a significant direct impact for **Biological Resources**. Birds and wildlife would be drawn to the pond's water and adversely affected. This issue also affects the **Water Resources** area since the project's current design involves turbine cooling water being released to a new evaporation pond and one that would be shared with BEP I. Staff believes that these potential impacts can be mitigated by eliminating the evaporation pond and using zero liquid discharge technology to dispose of cooling wastewater. This approach would also reduce the incidence of birds being attracted to the site, which presents a nuisance and a potential hazard to safe aviation operations at the nearby Blythe Airport.

A significant direct impact to **Water Resources** is likely because of local groundwater contamination resulting from the proposed project's deep wells that would supply water for turbine cooling. This would adversely affect residents of the surrounding Palo Verde Mesa area who are dependent on domestic wells for their drinking water supplies. Staff believes that this issue can be mitigated by either using dry cooling technology or wet cooling using low quality irrigation return water in conjunction with a WCOP that can be quantified and verified.

Staff has also identified a significant cumulative impact from the project's consumption of an already very limited supply of Colorado River water. The proposed wells and related groundwater basin would be hydrologically connected to the Colorado River, as the BEP I wells currently are. This issue can be mitigated by either using dry cooling technology or through development of a WCOP.

Staff is also concerned that the proposed project conflicts with some State policies regarding use of fresh water for industrial cooling purposes as a wasteful practice. Furthermore, the Energy Commission's 2003 Integrated Energy Policy Report states that fresh water should be the last choice when feasible and economical options such as recycled water or technology alternatives such as dry cooling are available. Staff has determined that recycled water is not sufficiently available, but that dry cooling is feasible and economical for BEP II, and that irrigation return water coupled with a WCOP is also feasible. Staff has recommended that either one be used to avoid a wasteful use of fresh water and inconsistency with State policy.

The Riverside County Airport Land Use Commission (ALUC) has determined that the proposed use of the BEP II site is not consistent with the Comprehensive Land Use Plan (CLUP) for the Blythe Airport. This State mandated Plan was formulated to ensure that surrounding land uses are compatible with airport operations. The ALUC's determination presents a LORS conformance problem, which is a potentially significant **Land Use** impact. Staff has not identified any mitigation for this impact.

BEP II's inherent need for turbine cooling at the proposed site will result in thermal and visible plumes with a potentially significant impact on aviation related **Traffic and Transportation** as it relates to aviation safety. Based upon pilot complaints and subsequent investigation associated with BEP I, staff expects that under certain weather conditions the plumes will create air turbulence and adversely affect pilots approaching the nearby Blythe Airport, which is approximately .75 mile from the BEP II site. Energy Commission staff, as well as the Riverside ALUC and the Caltrans Aeronautics Division staff, are concerned with the potential for direct impacts on aircraft safety caused by BEP II plumes, and the cumulative effects of the BEP II facilities' plumes when combined with those from the existing BEP I facility. A safety hazard for pilots, particularly those who are inexperienced, will result from facility operation whether wet cooling is used as proposed, or whether dry cooling is employed as recommended by staff. Staff has not been able to identify any feasible mitigation for this impact, and therefore has concluded that the BEP II should not be approved at the proposed site due to unavoidable conflicts with the safety of pilots using the Blythe Airport.

Staff's **Traffic and Transportation** conclusion regarding the conflict with the proposed site and the ongoing Blythe Airport operations, lead to an **Alternatives** evaluation of potential impacts at alternative sites, along with other technology options and the No Project Alternative. Staff's recommendation of using dry cooling or irrigation return water in conjunction with a WCOP was applied to each alternative site option considered in the Blythe area due to the groundwater hydrologic connection to the Colorado River system.

In addition to the potentially significant impacts discussed above, staff has insufficient and outdated information in the **Transmission System Engineering** area. The existing transmission studies are inaccurate and incomplete. Staff will be petitioning the Committee to compel the applicant to provide the complete information needed. The applicant is relying on the 2002-03 Blythe Area Regional Transmission (BART) Study instead of a System Impact Study for the project's transmission interconnection. The BART study is not based on a current project description, and staff has substantial concerns about its validity. The FSA identifies the lack of System Impact Studies and the lack of consideration of pending projects in the CA ISO and Western transmission planning queue (e.g., Southern California Edison's proposed Devers-Palo Verde No.2 500 kV Project and the Blythe I Energy Project Transmission Line modification plan). The applicant has proposed that BEP II connect with Western's transmission grid via the Imperial Irrigation District's proposed Desert Southwest Transmission Project. However, staff has substantial concerns about the viability and timing of this transmission project, since it is unknown when the Final Draft Environmental Impact Statement/ Draft Environmental Impact Report will be completed and released.

SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS

Staff believes that as currently proposed, the project will not comply with all applicable laws, ordinances, regulations, and standards (LORS), and that significant adverse direct, indirect, and cumulative impacts will occur. Significant issues in key technical areas are summarized below. For a more detailed review of potential impacts, see staff's technical analyses in the FSA.

Technical Area	Complies with LORS	Impacts Mitigated
Air Quality	Yes	Yes
Biological Resources	**No**	**No - Staff is recommending the applicant redesign project to a zero-liquid to solids technology**
Cultural Resources	Yes	Yes
Efficiency	Yes	Yes
Facility Design	Yes	Yes
Geology & Paleontology	Yes	Yes
Hazardous Materials	Yes	Yes
Land Use	**No**	**No – Conflict with Blythe Airport Comprehensive Land Use Plan**
Noise	Yes	Yes
Public Health	Yes	Yes
Reliability	Yes	Yes
Socioeconomic Resources	Yes	Yes
Soil & Water Resources	**No**	**No-BEP II has a significant direct and cumulative impact on groundwater quality, cumulative impacts on depleted Colorado River water supply and conflicts with State water policies.** **Use of agricultural irrigation return water and dry cooling would mitigate impacts to water, but would affect adjacent airport safety**
Traffic & Transportation	**No – Insufficient information**	**No- direct and cumulative impacts to airport safety**
Transmission Line Safety/Nuisance	Yes	Yes
Transmission System Engineering	**No– Insufficient information**	**No- project description is outdated, and provides insufficient information to determine environmental impacts of facilities and LORS conformance**
Visual Resources	Yes	Yes
Waste Management	Yes	Yes
Worker Safety and Fire Protection	Yes	Yes

ENVIRONMENTAL JUSTICE

Energy Commission staff has determined the potentially affected environmental justice region to be an area within a six-mile radius of the proposed BEP II site. The population within this area totals 12,170. The minority population within this area totals 7,216, or 59.29 percent of the total population. Because the screening analysis shows a greater than 50 percent minority population within the six-mile radius, staff considered an Environmental Justice screening as part of its environmental analysis. Staff also determined that 20.1 percent of the population is below the poverty level.
BEP II is located about two miles from Mesa Verde/Nicholls Warm Springs, a small, unincorporated residential and largely Spanish-speaking community in the Palo Verde Mesa. Residents of this community and the surrounding unincorporated area rely on private wells to pump groundwater for domestic and agricultural use.

Based on the **Soil and Water Resources** analysis, staff concludes that the proposed project could cause a disproportionate significant impact to a minority population if it is approved to use groundwater for cooling. This involves the potential significant direct impact to the community of Mesa Verde/Nicholls Warm Springs and surrounding private well users from the project's groundwater pumping. The proposed pumping would likely cause the upwelling or transport of groundwater with higher concentrations of naturally occurring minerals, degrading the aquifer's water quality.

The FSA concludes that the potential direct impact to local groundwater from BEP II would be mitigated to a less than significant level if the applicant redesigns the project. Specifically, this involves one of two options: 1) redesign BEP II to a dry cooling system; or 2) require BEP II to purchase low quality agricultural drain return water from PVID and implement a verifiably effective WCOP to mitigate the cumulative impact to the regional groundwater system. Implementation of either option would mitigate the potential environmental impact to groundwater as well as eliminate the disproportionate impact to a minority population. However, staff is not recommending approval of the BEP II project at the proposed site due to aviation safety concerns.

CONCLUSION AND RECOMMENDATION

Staff cannot recommend approval of the BEP II as proposed by the applicant at the current location. This recommendation results from the significant, unavoidable aviation safety impacts to pilots using the Blythe Airport and the inconsistency with the Airport's CLUP. Furthermore, staff is recommending that before this project can be approved, the applicant needs to:

- provide the appropriate Transmission System Engineering information;
- redesign the project to utilize a zero liquid discharge system; and
- use dry cooling or irrigation return water with a WCOP if an alternative site in the Blythe region is selected.

After evidentiary hearings, if the Commission decides to recommend approval of the project, staff has proposed conditions of certification to ensure that the facility is

constructed and operated in a safe and reliable manner and potential impacts are mitigated to a level of insignificance. Each technical area in the FSA includes a discussion of the project and the existing environmental setting; the project's conformance with laws, ordinances, regulations and standards (LORS) and whether the facility can be constructed and operated safely and reliably; project related direct and cumulative impacts; the environmental consequences of the project using the proposed mitigation measures; response to comments on the PSA, conclusions and recommendations; and any proposed conditions of certification under which the project should be constructed and operated.

Based on the significant impacts discussed above and other concerns, four alternative power plant sites were considered, including a Blythe Airport Site, Interstate 10 (I-10) Site, and South of Blythe Site, and one site adjacent to the Devers Substation north of Palm Springs. (Please refer to **Alternatives** Figures 1 and 2) Overall, the four site alternatives considered offer some advantages and disadvantages in comparison to the proposed project. With the exception of aviation safety impacts, three sites in the Blythe area have the same challenges as the proposed project with respect to water use and wet cooling; biological impacts from open evaporation ponds; and the same need for new transmission studies.

Of the alternatives considered, the I-10 Site provides a feasible alternative to the BEP II project. Because this site is not near the airport, dry cooling or wet cooling using irrigation return water together with a WCOP could be used and would mitigate the project’s impacts to water resources. A zero liquid discharge system would eliminate impacts to migratory birds. Although there are potential noise and visual resource impacts associated with this site, these impacts are likely mitigated to a less than significant level. The I-10 site is on prime farmland soils, so mitigation would also be required to compensate for the loss of farmland.